Rhinophyma: Treatment with CO₂ Laser

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Abstract

Rhinophyma is an acne rosacea which primarily affects the midface of elderly men, and causes disfigurement as well as obstruction. There are numerous ways of treating this condition and, in our institution, a CO₂ laser is the treatment of choice.

Introduction

Rhinophyma is an acne rosacea which affects more men than women, with a 3:1 prevalence among males. It rarely affects individuals younger than 45 years of age. A genetic predisposition in English and Irish descendants is common, but is rarely found in African-Americans. While the etiology is unknown, there have been theories of infection versus inflammation. Parasitic mites known as Demodex folliculorum may be responsible. It has also been reported that gastric disorders, spicy food, stress, caffeinated products and alcoholism may be the culprits. Acne rosacea primarily affects the sebaceous glands of the midface, including the nose, cheek, glabella, chin and forehead. The acne rosacea is formed by progression and proliferative growth of sebaceous glands with comedones. In theory, androgenic hormone can cause irreversible changes of these sebaceous glands. These changes cause a scar with a disfiguring lesion in these areas. Rhinophyma is characterized by its reddish to purple discoloration, comedone fissures, and lobulated bulbous appearance.

Rhinophymas were recorded by Greek and Arabic physicians as early as 2000 B.C., however, Herba (1845) is credited with the initial description of this malady. The disease is a well-known facial anomaly of older men and is explicit in Domenico Ghirlandaio's painting of Old Man with a Child from the 5th century.

The differential diagnosis for rhinophyma may include basal cell carcinoma, sebaceous carcinoma, metastatic clear cell carcinoma, and sebaceous adenoma. Basal cell carcinoma in conjunction with rhinophyma has been reported with an occurrence rate of 3% to 10%.

Methods

In our series, all patients received general anesthesia, after which the nose was prepared with Betadine, and moist towels were draped over the entire face with moist eye pads placed over the eyes. A CO₂ laser was used to ablate the disease. The laser was set at 15 watts using the continuous mode. The entire lining above the dermis was completely ablated and hemostasis was achieved by defocusing the laser beam. This is done by increasing the distance between the hand-piece and the tissue. The entire procedure took approximately 15 minutes. The area was then wrapped with 3% bismuth tribromophenate on petrolatum gauze for 24 hours. The patients were discharged after their recovery room stays and returned to our outpatient clinic for follow-up the next day. A return visit was then scheduled for four to six weeks and again three months later.

Results

CO₂ ablation performed on three patients produced an aesthetically pleasing result in all three. There were no complications related to scarring or destruction or loss of nasal cartilage. Figure 1 shows a patient before CO₂ laser surgery and again approximately two months later. This patient's rhinophyma was sufficiently large to keep him from seeing objects directly in front of him due to the obstruction. He was very grateful after surgery and no side effects were noted.

Discussion

Rhinophyma is a proliferation of sebaceous glands in the midface, most commonly the nose, which can be very disfiguring and cause superficial telangiectasia with hy-
Figure 1. A and B. Front and lateral views before surgery. C. During CO₂ laser treatment. D. Postoperative.
perplasia of the surrounding skin. Acne rosacea is a precursor of this disease, although the etiology is unknown. There has been some suggestion that stress, alcoholism, mites such as *Demodex folliculorum*, or infections may be predisposing factors. While treatment of rhinophyma is surgical, medical treatment may be attempted. In the early stages it is recommended that patients use a vigorous daily alcohol astringent wash or tetracycline 500 mg. bid for six weeks. In the late stages of the condition, surgery is the only treatment option. The preferred surgical management consists of CO\(_2\) laser ablation. Other common techniques include excision with electrocautery, total or partial excision with a scalpel, simple razor blade technique, dermabrasion, or use of an harmonic scalpel. Closure is obtained with these latter techniques by allowing the wound to either granulate by secondary intention, or by grafting with full or split-thickness skin grafts. When laser is chosen, the CO\(_2\) laser is the most commonly used device, but successful outcomes have also been obtained with both the argon and the Nd:YAG lasers. The CO\(_2\) laser ablation is performed by using the hand-piece attachment with the laser set at 15 watts in the continuous mode. Although use of the laser is more expensive than cautery, the reduced risk of scarring and the efficiency of the operating room time make the laser the instrument of choice. Reepithelialization usually occurs in six weeks, regardless of which method is used. The surgical procedure may be performed under general, local or regional anesthesia. When using a local anesthetic, 1% Xylocaine with epinephrine 1:100,000 is used to infiltrate the area. An intratrochlear or infraorbital block is used for regional anesthesia. Potential complications, regardless of the approach employed, include exposure or destruction of cartilage leading to chondritis, poor color and rough skin texture.

**Summary and Conclusions**

Rhinophyma is a disfiguring discoloration disease predisposed primarily by acne rosacea. It affects men over the age of 45 years. The only known and widely used treatment is surgical resection. There are many techniques available to remove rhinophyma, however, laser is the treatment of choice. The aesthetically pleasing results to the patient, the efficiency of the procedure for the surgeon, and the ease of hemostasis outweigh the sole disadvantage of the expense of CO\(_2\) laser use.

**Bibliography**